



## PATENT COOPERATION TREATY

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**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>DIH/P405092WO</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/GB02/01333</b>	International filing date (day/month/year) <b>20/03/2002</b>	Priority date (day/month/year) <b>20/03/2001</b>
International Patent Classification (IPC) or national classification and IPC <b>B62D6/00</b>		
Applicant <b>LUCAS INDUSTRIES LIMITED et al</b>		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand <b>08/10/2002</b>	Date of completion of this report <b>24.07.2003</b>	
Name and mailing address of the international preliminary examining authority:  <b>European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465</b>	Authorized officer <b>Bolte, U</b>  Telephone No. +49 89 2399 7431	

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International application No. PCT/GB02/01333

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-16 as originally filed

**Claims, No.:**

1-19 as originally filed

**Drawings, sheets:**

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:

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☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	5-10, 12, 13
	No:	Claims	1-4, 11, 14-19
Inventive step (IS)	Yes:	Claims	6-10, 12, 13
	No:	Claims	5
Industrial applicability (IA)	Yes:	Claims	1-19
	No:	Claims	

- 2. Citations and explanations**  
**see separate sheet**

**Re l t m V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**State of the Art**

The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

- D1: US-A-5 528 497 (YAMAMOTO YORIHISA ET AL) 18 June 1996
- D2: DE 41 23 235 C (MERCEDES-BENZ) 26 November 1992
- D3: DE 198 32 484 A (ITT MFG ENTERPRISES INC) 12 August 1999

**Novelty**

1. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of independent claim 1 is not new in the sense of Article 33(2) PCT.
  - 1.1 Prior art document D1 (abstract; fig. 2) pursuant to Article 33 (2) PCT already discloses a steering assistance controller for the generation of a compensating torque which assists a vehicle driver in overcoming the tendency of a vehicle to oversteer, comprising means to encourage the driver to steer the vehicle back to a non-oversteering condition through the application of the compensating torque, this compensating torque being arranged to be based at least in part upon vehicle state information.
2. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of dependent claims 2 - 4, 11, 14 - 19 is not new in the sense of Article 33(2) PCT.
  - 2.1 Regarding the dependent claim 2 it is noted that it is known from the prior art document D1 (fig. 2) which already discloses all subject-matter of independent claim 1, that the vehicle state information is comprised of one or more of vehicle yaw rate, lateral acceleration, vehicle side slip, longitudinal velocity, lateral velocity,

steering wheel angle, steering wheel velocity, driver applied steering torque and yaw acceleration.

- 2.2 Prior art document D1 (claim 5, 6) as well discloses the subject matter of dependent claim 3, that the system is adapted to derive the estimation of the tendency of the vehicle to oversteer based upon estimates of vehicle yaw rate which are compared with measurements of actual vehicle yaw rate to provide a yaw rate error which is used as a measure of oversteer present on the vehicle.
- 2.3 Prior art document D1 (fig. 12) further discloses the subject matter of dependent claim 4, that the system comprises a closed loop observer having yaw rate feedback which is arranged such that, when the vehicle starts to oversteer, a non-linear region is entered and the previously existing linear estimate diverges from the feedback signal whereby the magnitude of the vehicle yaw rate is greater than the magnitude of the estimated yaw rate.
- 2.4 The features of dependent claim 11, that the system includes a steering controller which generates an input to the vehicle steering system based on detection that the vehicle is in an oversteer condition is already known from document D1 (abstract, fig. 13).
- 2.5 The additional features of claims 14 to 19 deal with specific electronic details that are either anticipated by or for a person skilled in the art easily derivable without inventive skill from document D1. Accordingly these claims fail to fulfill the requirements of Art. 33(1) PCT.

### **Inventive step**

3. The present application does not meet the requirements of Article 33 (1) PCT because the subject-matter of claim 5 does not involve an inventive step in the sense of Article 33(3) PCT:
- 3.1 The additional features of claim 5, to estimate the oversteer tendency of the car by measuring the lateral accelerations at the front and the rear of the vehicle instead of using a gyroscopic device to determine the yaw-rate are regarded as

mere design measures falling within the scope of customary duties of the skilled person that has to design an alternative sensor setup. A similar approach is documented in D2 (claim 20).

**Assessment of the remaining claims**

4. Claims 6 - 10, 12 and 13 seem to disclose subject-matter which is neither known nor obvious in the respective art.

**Certain defects in the international application**

- Concerning the claims

5. Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
6. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

- Concerning the description

7. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 through D3 is not mentioned in the description, nor are these documents identified therein. It is not stated in the description that document D1 forms the closest prior art from which the invention departs and which forms the base for the preamble of independent claim 1.